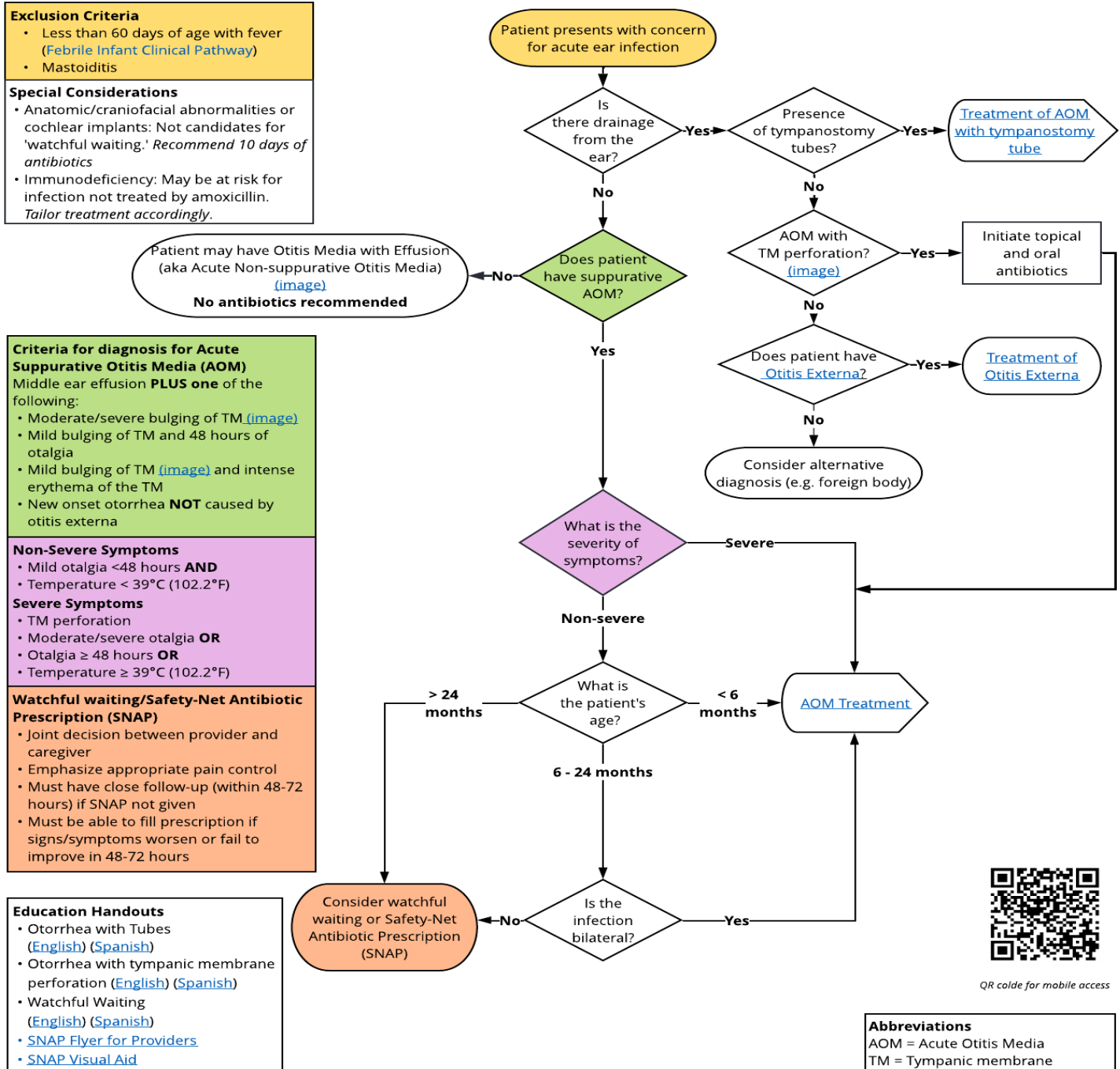




Acute Otitis Media (AOM) Clinical Pathway Synopsis

Acute Otitis Media: Diagnosis Algorithm



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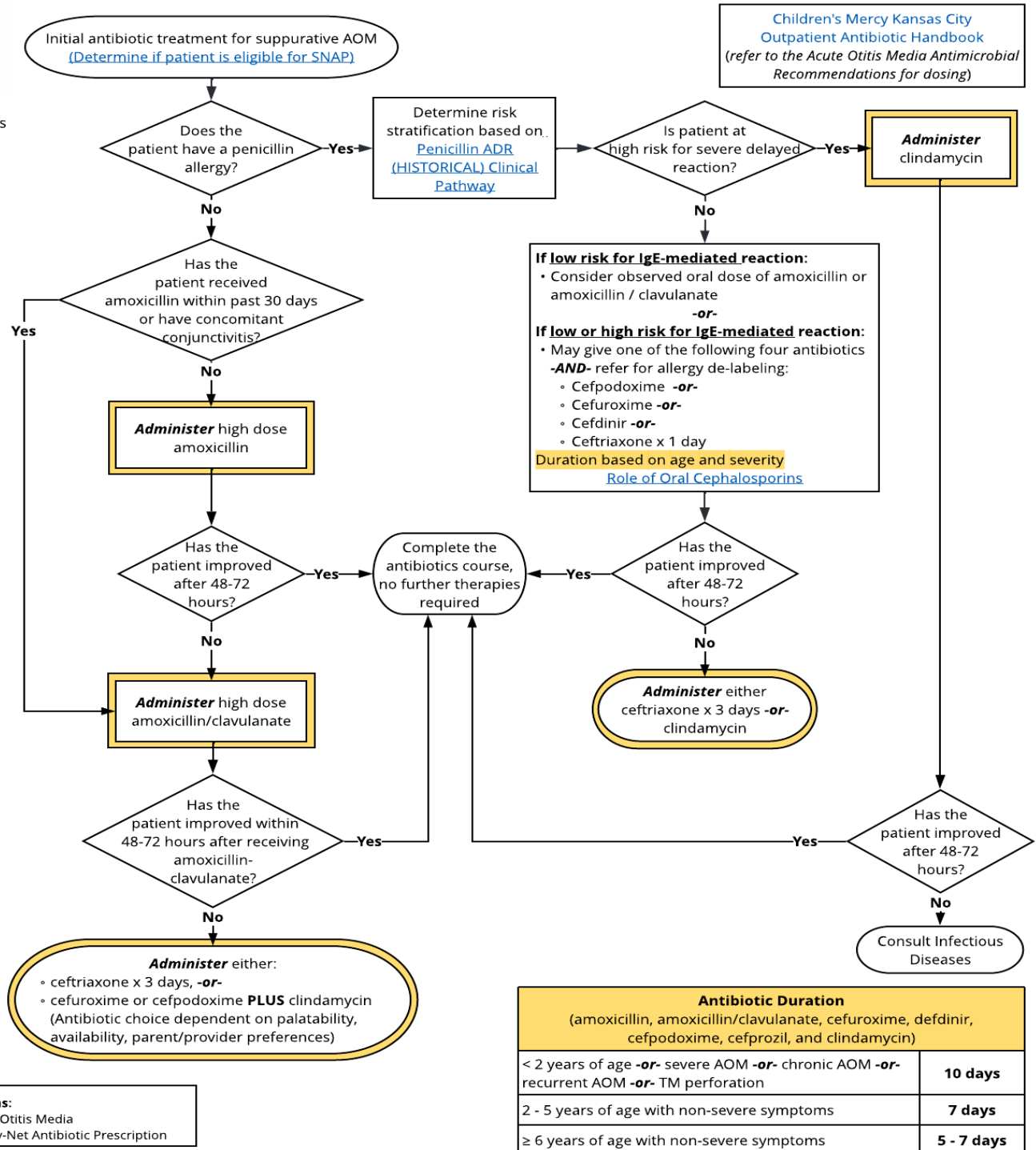
These clinical pathways do not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment in determining what is in the best interests of the patient based on the circumstances existing at the time. It is impossible to anticipate all possible situations that may exist and to prepare a clinical pathway for each. Accordingly, these clinical pathways should guide care with the understanding that departures from them may be required at times.



Acute Otitis Media: Treatment Algorithm



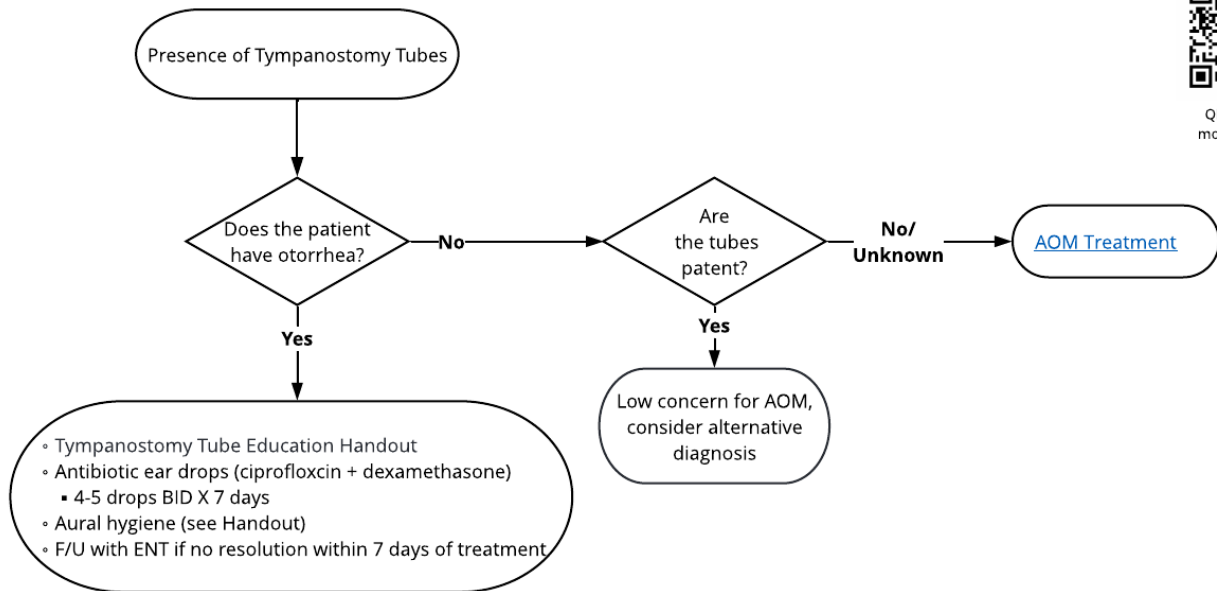
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mobile access



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Acute Otitis Media: Tympanostomy Tube Algorithm



QR code for
mobile access

Abbreviations:

ENT = Ears, Nose, and Throat
BID = Twice per day

Education Handouts

- Otorrhea with Tubes
([English](#)) ([Spanish](#))
- Otorrhea with tympanic membrane perforation
([English](#)) ([Spanish](#))

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Objective of Clinical Pathway

To establish care standards for patients diagnosed with acute otitis media and provide guidance on management throughout the care continuum.

Background

Acute otitis media (AOM) is an infection of the middle ear (Danishyar et al., 2021). It is the second most common pediatric diagnosis in the emergency department. Acute otitis media can occur at any age, but is most commonly seen between 6 months and 2 years of age. Roughly 80% of all children will experience otitis media at some point in their lifetime, and between 80% and 90% of these children will have otitis media with effusion before entering school. There is an increased risk of tympanic membrane perforation with AOM, particularly in children with a history of infections (Pelton & Tahtinen, 2022). Additionally, the most common cause of tympanostomy tube otorrhea in children is AOM (Schmelzle et al., 2008).

Target Users

- Physicians (Emergency Medicine, Urgent Care, Ambulatory Care Clinics, Pediatric Hospital Medicine, Fellows, and Residents)
- Advanced practice providers (Nurses and Physician Assistants)
- Staff nurses

Target Population

Inclusion Criteria

- 0 months to 18 years with:
 - Uncomplicated AOM
 - AOM with tympanostomy tubes
 - AOM with acute tympanic membrane perforation

Exclusion Criteria

- < 60 days with fever (defer to Febrile Infant Clinical Pathway)
- Mastoiditis
- Anatomic abnormalities (including cleft palate)
- Genetic conditions with craniofacial abnormalities (such as Down Syndrome)
- Immune deficiencies
- Presence of cochlear implants

AGREE II

The American Academy of Pediatrics national guideline provided guidance to the Acute Otitis Media Clinical Pathway Committee (Lieberthal et al., 2013; NICE, 2022). See Tables 1 and 2 for AGREE II.

Table 1

AGREE II^a Summary for the AAP Guideline (Lieberthal et al., 2013)

Domain	Percent Agreement	Percent Justification [^]
Scope and purpose	100%	The aim of the guideline, the clinical questions posed, and the target populations were identified.
Stakeholder involvement	85%	The guideline was developed by the appropriate stakeholders and represents the views of its intended users.
Rigor of development	93%	The process used to gather and synthesize the evidence, as well as the methods to formulate the recommendations and update the guidelines, were explicitly stated.
Clarity and presentation	93%	The guideline recommendations are clear, unambiguous, and easily identifiable; additionally, different management options are presented.
Applicability	83%	Barriers and facilitators to implementation, strategies to improve utilization, and resource implications were addressed in the guideline.
Editorial independence	83%	The recommendations were not biased by competing interests.

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Overall guideline
assessment 90%

See Practice Recommendations

Note: Four EBP Scholars completed the AGREE II on this guideline.

^ Percentage justification is an interpretation based on the Children's Mercy EBP Department standards.

Table 2

AGREE II^a Summary for the National Institute for Health and Care Excellence Guideline (NICE, 2018)

Domain	Percent Agreement	Percent Justification [^]
Scope and purpose	100%	The aim of the guideline, the clinical questions posed, and the target populations were identified.
Stakeholder involvement	88%	The guideline was developed by the appropriate stakeholders and represents the views of its intended users.
Rigor of development	90%	The process used to gather and synthesize the evidence, as well as the methods to formulate the recommendations and update the guidelines, were explicitly stated.
Clarity and presentation	99%	The guideline recommendations are clear, unambiguous, and easily identifiable; additionally, different management options are presented.
Applicability	76%	Barriers and facilitators to implementation, strategies to improve utilization, and resource implications were addressed in the guideline.
Editorial independence	85%	The recommendations were not biased by competing interests.
Overall guideline assessment	90%	
See Practice Recommendations		

Note: Four EBP Scholars completed the AGREE II on this guideline.

^ Percentage justification is an interpretation based on the Children's Mercy EBP Department standards.

Practice Recommendations

The American Academy of Pediatrics (AAP) guideline, The Diagnosis and Management of Acute Otitis Media, served as the parent guideline (Lieberthal et al., 2013) for this clinical pathway. While the guideline received a high rating using the AGREE II evaluation tool (Brouwers et al., 2010), the committee recommended modifications due to the guideline's age. In particular, the guideline includes evidence on the use of the pneumococcal vaccine prior to its introduction, which is known to affect the rate and causative organisms of AOM (Eskola et al., 2001).

The National Institute for Health and Care Excellence (NICE) guideline (2018) recommends antibiotics for those < 2 years of age with bilateral AOM or for those at any age with otorrhea. For most other children, the guideline focuses on symptomatic care and recommends not providing antibiotics or providing a Safety-Net Antibiotic Prescription (SNAP). If an antibiotic is prescribed, amoxicillin is recommended for a duration of 5 to 7 days. Even though NICE (2022) is a more recent guideline, its recommendations are based on the same evidence as the 2013 AAP guideline.

Additional Questions Posed by the Clinical Pathway Committee

[For pediatric patients with acute otitis media, is a short-course antibiotic regimen equivalent to a longer-course regimen in terms of outcome of cure rate and adverse events?](#)

The literature search was updated with the December 2025 review. No evidence was found to support a change to the current recommendations.

Recommendations from the Acute Otitis Media Clinical Pathway Committee

A **conditional** recommendation is made against the use of short-course antibiotics, based on the GRADE Evidence to Decision instrument and the Summary of Findings. Although the evidence is promising for reducing antibiotic length, the overall certainty in the evidence is very low. Only one cohort study (El-Shabrawi et al., 2016) and a quality improvement study (Frost et al., 2022) found that shorter-course

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antibiotics were equivalent to or better than longer-course antibiotics for patients with AOM. When there is a lack of scientific evidence, standard work should be developed, implemented, and monitored.

For pediatric patients with acute otitis media, is low-dose amoxicillin equivalent to or better than high-dose amoxicillin in terms of clinical cure, failure rate, and adverse events?

The literature search was updated with the December 2025 review. No evidence was found to support a change to the current recommendations.

Recommendations from the Acute Otitis Media Clinical Pathway Committee

A **conditional** recommendation against the intervention of low-dose versus high-dose amoxicillin. Although the review found no difference between low-dose and high-dose amoxicillin, the overall certainty of the evidence is very low. Only one cohort study (Chu et al., 2014) and one RCT (Bielicki et al., 2021) found lower-dose amoxicillin to be equivalent to high-dose amoxicillin for patients with AOM. When there is a lack of scientific evidence, standard work should be developed, implemented, and monitored.

For pediatric patients with acute otitis media and tympanostomy tubes, are antibiotic ear drops (topical, otic drops) versus oral antibiotics better for clinical outcomes, such as cure rates?

Recommendations from the Acute Otitis Media Clinical Pathway Committee

A **conditional** recommendation is made for the use of ear drops over oral antibiotics for patients with tympanostomy tubes, based on the GRADE Evidence to Decision instrument and the Summary of Findings. Although the certainty of the evidence is low to very low, antibiotic ear drops were found to be more favorable than oral antibiotics for resolving ear discharge. Additionally, no adverse events were found to be different between the two interventions. Standard work should be developed, implemented, and monitored when there is a lack of scientific evidence.

Recommendation Specific to Children's Mercy

Children's Mercy adopted the majority of the practice recommendations made by the 2013 AAP Clinical Practice Guideline. Additions include:

- Management of AOM with tympanostomy tube
 - Antibiotic ear drops (ciprofloxacin + dexamethasone)
 - Aural hygiene (see Handout – Appendix A)
 - Follow up with ENT if no resolution within 7 days of treatment

Updates from Previous Versions of the Clinical Pathway

- Two of the three questions have updated literature reviews, but no updates to current recommendations
- Antibiotic dosing recommendations were added

Measures

- Use of watchful waiting and/or SNAP, when appropriate
- Antibiotic duration prescribed
- Unplanned return visit within 14 days

Value Implications

The following improvements may increase value by reducing both monetary and non-monetary costs (e.g., missed school/work, loss of wages, stress) for patients and their families, as well as reducing costs and resource utilization for healthcare facilities.

- Reduced financial cost of fewer antibiotics
- Reduced cost of antimicrobial resistance in the community
- Reduced risk of adverse drug events

Organizational Barriers and Facilitators

Potential Barriers

- Variability of an acceptable level of risk among providers
- Variability in experience among clinicians
- Need for effective communication and coordination among clinicians and specialties

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- Challenges with access to healthcare and health literacy faced by some families

Potential Facilitators

- Collaborative engagement across the continuum of clinical care settings and healthcare disciplines during clinical pathway development
- High rate of use of the clinical pathway

Bias Awareness

Our goal is to recognize the social determinants of health and minimize healthcare disparities, while acknowledging that our unconscious biases can contribute to these disparities.

Order Sets

- There are no order sets associated with this clinical pathway

Associated Policies

- There are no associated policies for acute otitis media

Educational Materials

- Otorrhea with Tubes ([English](#))([Spanish](#))
 - Intended to be customized to the individual patient
 - Found on the EBP website and within the algorithms
 - Available in English and Spanish
- Otorrhea with tympanic membrane perforation ([English](#))([Spanish](#))
 - Intended for all patients
 - Found on the EBP website and within the algorithms
 - Available in English and Spanish
- Watchful Waiting ([English](#))([Spanish](#))
 - Intended for all patients and their caregivers
 - Found in the electronic medical record with depart education
 - Found on the EBP website and algorithms
- [SNAP Flyer](#) for Providers
 - Intended for all providers
 - Found on the EBP website and algorithms
- [SNAP Visual Aid](#)
 - Intended for all providers
 - Found on the EBP website and algorithms

Clinical Pathway Preparation

This pathway was prepared by the EBP Department in collaboration with the Acute Otitis Media Clinical Pathway Committee, composed of content experts at Children's Mercy Kansas City. Literature analysis was conducted by the EBP department to address additional questions posed by the AOM Clinical Pathway Committee. If a conflict of interest is identified, the conflict will be disclosed next to the committee member's name.

Clinical Pathway Representation

This clinical pathway was originally developed with representation from Infectious Diseases, Urgent Care, Emergency Medicine, Ear, Nose, and Throat, and Evidence Based Practice.

Acute Otitis Media Clinical Pathway Revision Representation

- Rana El Feghaly, MD, MSCI | Infectious Diseases | Committee Chair
- Donna Wyly, MSN, RN, APRN, CPNP-AC, PCNP-BC, ONC | Urgent Care | Committee Member
- Holly Austin, MD, FAAP | Urgent Care | Committee Member
- Tanis Stewart, MSN, RN, FNP-BC, CPN | Emergency Medicine | Committee Member
- Thomas Eyen, MD | Ear, Nose, and Throat (ENT) | Committee Member
- Trisha Williams, RN, APRN, CPN, CPNP | Ear, Nose, and Throat (ENT) | Committee Member

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EBP Committee Members

- Kathleen Berg, MD, FAAP | Evidence Based Practice
- Andrea Melanson, OTD, OTR/L | Evidence Based Practice

Clinical Pathway Development Funding

The development of this clinical pathway was underwritten by the following departments/divisions: Infectious Diseases, Urgent Care, Emergency Medicine, Ear, Nose, and Throat, and Evidence Based Practice.

Conflict of Interest

The contributors to the Acute Otitis Media Clinical Pathway have no conflicts of interest to disclose related to the subject matter or materials discussed.

Approval Process

- This pathway was reviewed and approved by the EBP Department and the Acute Otitis Media Clinical Pathway Committee after committee members garnered feedback from their respective divisions/departments.

Review Requested

Department/Unit	Date Obtained
Infectious Disease	December 2025
Urgent Care	December 2025
Emergency Medicine	December 2025
ENT	December 2025
Evidence Based Practice	December 2025

Version History

Date	Comments
November 2018	Version one – developed algorithms, synopsis, education, and resources
June 2020	Version two – minor updates to synopsis
October 2022	Version three – completed review of two clinical practice guidelines and literature for the development of three critically appraised topics
December 2025	Version four – completed literature review and updated two critically appraised topics

Date for Next Review

- 2028

Implementation & Follow-Up

- Once approved, the pathway was implemented and presented to appropriate care teams:
 - Announcements made to relevant departments
 - Additional institution-wide announcements were made via the hospital website and relevant huddles
 - Community clinics affiliated with CM received announcements via "Progress Notes."
- Care measurements may be assessed and shared with appropriate care teams to determine if changes need to occur.
- Pathways are reviewed every 3 years (or sooner) and updated as necessary within the EBP Department at CMKC. Pathway committees are involved with every review and update.

Disclaimer

When evidence is lacking or inconclusive, options in care are provided in the supporting documents and the power plan(s) that accompany the clinical pathway.

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